STATE FOREST LAND
ENVIRONMENTAL CHECKLIST

Purpose of Checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decided whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can. *Questions in italics are supplemental to Ecology's standard environmental checklist. They have been added by the DNR to assist in the review of state forest land proposals. Adjacency and landscape/ watershed-administrative-unit (WAU) maps for this proposal are available on the DNR internet website at http://www.dnr.wa.gov under "SEPA Center." These maps may also be reviewed at the DNR regional office responsible for the proposal. This checklist is to be used for SEPA evaluation of state forest land activities.*

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. *All of the questions are intended to address the complete proposal as described by your response to question A-11. The proposal acres in question A-11 may cover a larger area than the forest practice application acres, or the actual timber sale acres.*

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered " does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NON PROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer" and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable:

   *Timber Sale Name:***MAPLE MAYHEM** *Agreement #:* **30-079396**

2. Name of applicant: **Washington State Department of Natural Resources**

3. Address and phone number of applicant and contact person:

   Pacific Cascade Region
   Robert W. Johnson
   P.O. Box 280
   Castle Rock, WA 98611-0280
   (360) 577-2025

4. Date checklist prepared: **05/04/2006**

5. Agency requesting checklist:

   Washington State Department of Natural Resources.

6. Proposed timing or schedule (including phasing, if applicable):

   a. *Auction Date:***11/30/2006**
   b. *Planned contract end date (but may be extended):* **11/30/2008**
   c. *Phasing:* **None planned.**

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

   Timber Sale

   a. *Site preparation:*

   May apply herbicide for site preparation.

   b. *Regeneration Method:*

   Hand-plant conifer seedlings at a rate that meets or exceeds Forest Practices standards.

   c. *Vegetation Management:*

   Treatments of competing vegetation will be based on ongoing assessments. Vegetation control activities will occur as needed.

d. *Thinning:*

This stand will be assessed for thinning needs and may have commercial thinning at a later date.

Roads:

Roads remaining at the termination of the sale will be used for future forest management activities such as administrative access, plantation assessments, and plantation maintenance when needed. Road maintenance and periodic ditch and culvert cleanout will occur as necessary. Future timber sales will use some of these roads for access.

Rock Pits and/or Sale:

The Washtub Quarry, a State owned rock source, may be used with the Maple Mayhem proposal.

Other:

Landing slash piles may be burned following the completion of logging activities and/or prior to reforestation. Firewood salvage may occur after logging operations.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

☐*303 (d) – listed water body in WAU:* ☐*temp* ☐*sediment* ☐*completed TMDL (total maximum daily load):*
☐*Landscape plan:*
☐*Watershed analysis:*
☐*Interdisciplinary team (ID Team) report:*
☒*Road design plan:* **Available at the Pacific Cascade Region Office.**
☐*Wildlife report:*
☐*Geotechnical report:*
☐*Other specialist report(s):*
☐*Memorandum of understanding (sportsmen's groups, neighborhood associations, tribes, etc.):*
☐*Rock pit plan:*
☒*Other:* **The Final Forest Resource Plan (July 1992), Final Habitat Conservation Plan (September 1997), DNR Planning and Tracking (P&T) spatial and tabular reports.**

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

None known.

10. List any government approvals or permits that will be needed for your proposal, if known.

☒*HPA* Blanket Hydraulic Permit Application, Log Number ST-D9199-04 for cable tail holds, timber felling and yarding. Hydraulic Permit Application, for culvert installation and removal.
☒*Burning permit* ☐*Shoreline permit* ☒*Incidental take permit, 1168 and PRT-812521* ☒*FPA #* **2914313** ☐ *Other:*

11. Give brief, complete description of our proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include specific information on project description.)

a. Complete proposal description:

Sale of Timber:
Estimated Total Volume removed will be 3.5 MMBF

Unit 1:
Total Proposed Area Acres (Gross): 100
Total RMZ/WMZ Acres: 7
Total Sale Area Acres: 93
Total Leave Tree Acres: 3
Total Existing Road Acres: 8
Total Harvest Area Acres (net): 82

Unit 2:
Total Proposed Area Acres (Gross): 84
Total RMZ Acres: 24
Total Sale Area Acres: 60
Total Leave Tree Acres: 2
Total Harvest Area Acres (net): 58

Right Of Way:
Total Acres: 2

Maple Mayhem is a two-unit regeneration harvest. This proposal is located in the Bunker Creek and Lincoln Creek WAU's. Eight trees per acre will be left clumped and scattered throughout both units. This proposal includes 1900 feet of road abandonment and removal of three fish barriers, on the existing mainline. This road will be re-routed for the purpose of this sale and future forest management activities. The proposal will also include abandonment of 3146 feet of new construction upon completion of harvest.

b. Timber stand description pre-harvest (include major timber species and origin date), type of harvest, overall unit objectives.

Stand Description:

Unit 1
Unit 1 of the sale area is 93 acres and consists of approximately 60% conifer and 40% hardwoods. The conifer component is primarily Douglas-fir with a little grand fir and western redcedar mixed in. The hardwood component

is primarily bigleaf maple with a little red alder mixed in. The stand is approximately 62 to 64 years old. Under-story vegetation is primarily sword fern, vine maple, salal, elderberry, and Oregon grape. The proposal is within the western hemlock vegetation zone.

Unit 2
Unit 2 of the sale area is 60 acres and consists of approximately 50% conifer and 50% hardwoods. The conifer is primarily Douglas-fir with a small grand fir component. The hardwoods consist mostly of bigleaf maple with a white oak component, and some red alder mixed in. The stand is approximately 61 years old. Under-story vegetation is primarily sword fern, vine maple, salal, elderberry, and Oregon grape.

Type of Harvest:
The two unit proposal is an even-aged harvest that consists of scattered and clumped leave trees within the unit. Approximately 50% of the proposal will be harvested using ground-based systems and 50% using cable methods.

Overall Unit Objectives:
Harvest objectives for this proposal are to provide revenue for trust beneficiaries through sustainable forestry practices while meeting the obligations of the Forest Practices rules and the DNR's HCP. Specific environmental objectives include maintaining water quality, provision of retention trees, and minimizing impacts to soils, thus providing habitat for a variety of aquatic and upland species.

c. *Road activity summary. See also forest practice application (FPA) for maps and more details.*

Type of Activity	How Many	Length (feet) (Estimated)	Acres (Estimated)	Fish Barrier Removals (#)
Construction		6421	9	
Reconstruction		2480		
Abandonment		4696	7	3
Bridge Install/Replace	0			
Culvert Install/Replace (fish)	0			
Culvert Install/Replace (no fish)	21			

12. Location of proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. *(See timber sale map. See also color landscape/WAU map on the DNR website http://www.dnr.wa.gov under "SEPA Center.")*

a. Legal description:

Section 34, Township, 15 North, Range 5 West, W.M.
Section 3, Township 14 North, Range 4 West, W.M.
Section 10, Township 14 North, Range 4 West, W.M.
Section 11, Township 14 North, Range 4 West, W.M.

b. *Distance and direction from nearest town (include road names):*

Maple Mayhem timber sale is located approximately 10 miles northwest of Chehalis, Wa. From I-5, take exit 77. Head west on Hwy 6 4.5 miles to Adna (Bunker Creek Road). Follow Bunker Creek Road 3.2 miles to Deep Creek Road. Turn right and follow Deep Creek Road 4.0 miles. Deep Creek Road becomes the D-1000; follow D-1000 3.5 miles to proposal area.

c. *Identify the watershed administrative unit (WAU), the WAU Sub-basin(s), and acres. (See also landscape/WAU map on DNR website http://www.dnr.wa.gov under " SEPA Center.")*

WAU Name	WAU Acres	Proposal Acres
BUNKER CREEK	65676	79
LINCOLN CREEK	33097	74

13. *Discuss any known future activities not associated with this proposal that may result in a cumulative change in the environment when combined with the past and current proposal(s). (See digital ortho-photos for WAU and adjacency maps on DNR website http://www.dnr.wa.gov under "SEPA Center" for a broader landscape perspective.)*

Known And Observed WAU Conditions:

This proposal is located within the Bunker Creek and Lincoln Creek WAU's. Agriculture and home sites are located in the valleys near the major streams with some home sites located in the uplands. There appears to be a recent trend towards increasing conversion of agriculture and forestry lands to home sites in the low- to mid-elevations. The uplands are primarily managed for timber production. Ownership includes large industrial forests, small private forests, and DNR managed forests. Forest stands within this WAU appear to be almost exclusively second and third growth stands. A 1990 aerial photo indicates that many of the stands on private lands within these WAU's were regeneration harvested in the 1970's and 1980's. The number of Forest Practices shown on the WAU maps (referenced above on the DNR website), along with observations within these WAU's, indicates that the remaining second growth timber stands are intensively managed. Management includes regeneration harvests, thinnings, and partial cuts, reforestation, and stand maintenance activities.

The following tables are an estimated summary of past and future activity on DNR-managed land and privately managed land in the Bunker Creek and Lincoln Creek WAUs (information is based off of Forest Practices applications that have been approved in the last seven years compiled by the Department's GIS database). No attempt was made to predict future timber harvest on private ownerships within these WAU's. The source of this information only provided the acreage on the WAU level.

Bunker Creek WAU	WAU ACRES	ACRES OF EVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	ACRES OF UNEVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	ACRES OF PROPOSED EVEN-AGED HARVEST IN THE FUTURE (FY 2005/2006)	ACRES OF PROPOSED UNEVEN-AGED HARVEST IN THE FUTURE (FY 2005/2006)
DNR MANAGED LAND	7,446(11%)	973	570	739	872
PRIVATE OWNERSHIP	58,230	1,904	891	UNKNOWN	UNKNOWN
TOTAL	65,676	2,842	1,769	739	872

Linclon Creek WAU	WAU ACRES	ACRES OF EVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	ACRES OF UNEVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	ACRES OF PROPOSED EVEN-AGED HARVEST IN THE FUTURE (FY 2005/2006)	ACRES OF PROPOSED UNEVEN-AGED HARVEST IN THE FUTURE (FY 2005/2006)
DNR MANAGED LAND	11,723(35%)	1,891	1,203	1,086	1,068
PRIVATE OWNERSHIP	21,374	2,790	884	UNKNOWN	UNKNOWN
TOTAL	33,097	4,402	2,282	1,086	1,068

The DNR has an HCP agreement with the federal government concerning threatened and endangered species and their habitats, which requires the Department to manage landscapes in a conservative manner. This agreement substantially helps the Department to mitigate for potentially harmful cumulative effects related to its management activities. The HCP is designed to protect and promote fish and wildlife species and their habitats over a broad regional area. Mitigation strategies incorporated into this proposal are as follows:

- **This proposal will be regenerated to meet Forest Practices stocking requirements after harvest completion.**
- **Abandoning roads and rerouting a road system to minimize the number of stream crossings and the potential for sediment delivery.**
- **The removal of three fish blockage culverts.**
- **Designating Riparian Management Zones averaging 160 feet wide along three type 3 streams, and a minimum of 100 feet wide along two type 4 streams, and one ½ acre wetland which is located in the northeast corner of unit 1. Measures such as retaining RMZs within the proposal should reduce the possibility of negatively influencing water temperature parameters.**
- **Retaining eight leave trees per acre in the stand greater than 12" DBH scattered and clumped throughout the unit. The strategy of retaining leave trees in the regeneration harvest area provides legacy elements for recruitment of future snags, coarse woody debris, multi-layered stands, and large diameter trees. In combination, these features will provide elements of older forest habitat characteristics within the third growth stand. By managing to develop older forest characteristics, habitats will be provided for wildlife species dependent on older forest habitat.**

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (check one):

☐Flat, ☐Rolling, ☒Hilly, ☐Steep Slopes, ☐Mountainous, ☐Other:

1) General description of the WAU or sub-basin(s) (landforms, climate, elevations, and forest vegetation zone).

The sub-basins within the Bunker Creek WAU generally consist of hilly terrain surrounding the fairly broad valleys of the lower and middle reaches of the mainstem streams and moderately steep to steep, more dissected terrain of the tributary streams above and along the upper reaches of the mainstem streams. Elevations range from about 200 and 1200 feet . There are some slopes over 65% but most vary between 20% and 45%. The WAU averages about 50 inches of precipitation per year. The major timber types are Douglas-fir and red alder. Bunker Creek flows from west to east.

The sub-basins within the Lincoln Creek WAU are generally similar to those of the Bunker Creek WAU except the terrain in the uplands os the upper and middle reaches tend to be less dissected with elevations ranging between 200 and 1,500 feet elevation. There are some slopes over 65% but most vary between 5% and 45%. The WAU averages about 50 inches of precipitation per year. The major timber type is Douglas-fir. Lincoln Creek flows from west to east.

2) Identify any difference between the proposal location and the general description of the WAU or sub-basin(s).

The proposal fits the general WAU descriptions above.

b. What is the steepest slope on the site (approximate percent slope)? **45%**

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland. *Note: The following table is created from state soil survey data. It is a roll-up of general soils information for the soils found in the entire sale area. It is only one of several site assessment tools used in conjunction with actual site inspections for slope stability concerns or erosion potential. It can help indicate potential for shallow, rapid soil movement, but often does not represent deeper soil sub-strata. The actual soils conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors. The state soil survey is a compilation of various surveys with different standards.*

State Soil Survey #	Soil Texture or Soil Complex Name	% Slope	Acres	Mass Wasting Potential	Erosion Potential
4714	LOAM	15-45	130	INSIGNIFIC'T	MEDIUM
4713	LOAM	8-20	22	INSIGNIFIC'T	MEDIUM
2406	SILT LOAM	0-8	1	INSIGNIFIC'T	MEDIUM

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

1) Surface indications:

Although no evidence of recent shallow or deep-seated movement was observed within the sale area, a deep-seated landslide is shown on the geologic map adjacent to the southern unit and subtle scars with exposed soils, locally broken, poorly drained toe and steep upper slopes with some apparent hollows, and incising streams bound by inner gorge slopes occur along slopes south of Lincoln Creek, near the sale area.

2) Is there evidence of natural slope failures in the sub-basin(s)?
☐*No* ☒*Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:*

Evidence of both shallow and deep-seated landslides are locally visible in aerial photos along the northern portion of the Deep Creek ownership block south of Lincoln Creek. Deep-seated landslides seem to occur mostly on north facing slopes but most are deeply eroded indicating little active movement in the recent past. Much smaller and shallower, but still deep-seated, earthflows appear to be present within some wet headwalls areas of the relic deep-seated slides. Some debris slides, soil slips, and a few possible debris flows are visible in aerial photo within young reprod units. Debris slides and soil slips initiate along the mid-slope and from hollows within headwalls with the possible debris flows apparently initiating form the headwall area at the top of steeper draws. Field indicators of shallow failures were seen with slopes greater than 65% found most commonly within the RMZ's along the toe slopes of the main draws, within hollows that extend as far up as mid-slope, and/or within headwalls at the top of the steeper draws. No unstable features were identified within sale boundaries.

3) Are there slope failures in the sub-basin(s) associated with timber harvest activities or roads?
☐*No* ☒*Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:*
Associated management activity:

The Lincoln Creek and Bunker Creek WAUs show evidence of shallow mid-slope failures associated with poorly built or maintained roads and some inner gorge failures where there is diminished root strength from past harvests.

4) Is the proposed site similar to sites where slope failures have occurred previously in the sub-basin(s)?
☒*No* ☐*Yes, describe similarities between the conditions and activities on these sites:*

Compared to those areas of mostly steep slopes associated with areas of landslides in the two WAUs, the sale site is located on relatively flat terrain with a low probability of failure or movement.

5) Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal.

The RMZ's will protect the area adjacent to and within type 3 and 4 streams from soil disturbance. These were set up using sale boundary tags as to make all RMZ's outside of the harvest unit. Roads were located as to minimize disturbance to type 5 streams and headwall areas. Ground disturbance will be minimized by limiting the operation of ground based harvesting equipment to slopes less than 30% and by requiring lead end suspension on cable settings. This proposal includes the abandonment a stream adjacent road, and re-routing a road system. Where possible, leave trees were clumped in headwall areas.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.
Approx. acreage new roads: **2.6** *Approx. acreage new landings:* **2** *Fill source:* **Native Materials.**

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Yes, minimal erosion may occur as the result of road construction, road use, and logging operations.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? *Approximate percent of proposal in permanent road running surface (includes gravel roads):*

Approximately 3% of the site will be covered with impervious surfaces in the form of gravel roads during harvest activities. Optional roads constructed with the proposal will be abandoned after harvest.

h. Propose measures to reduce or control erosion, or other impacts to the earth, if any:
(Include protection measures for minimizing compaction or rutting.)

The following erosion protection measures will be incorporated into the Maple Mayhem Timber Sale proposal:

- **Prohibiting road construction between September 30 and May 1 unless authorized by the Contract Administrator.**
- **Revegetating cut and fill slopes on newly constructed and/or reconstructed roads.**
- **Controlling drainage through the use of adequate number and size of cross-drain culverts.**
- **Designating Riparian Management Zones averaging 160 feet wide along three type 3 streams, and a minimum of 100 feet wide on two type 4 streams, and one ½ acre wetland.**
- **Ground based equipment will be limited to operating on slopes less than 30%.**
- **There will be a 30 foot wide equipment limitation zone on all type 5 streams.**

2. Air

a. What types of emissions to the air would result from the proposal (i.e., dust *from truck traffic, rock mining, crushing or hauling,* automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Minimal amounts of engine exhaust from logging equipment, log trucks, and automobile exhaust will be emitted as a result of the this proposal. If slash is burned, smoke will be emitted into the air.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Slash, if burned, will be burned in accordance with the State's Smoke Management Program. A burn permit will be obtained before burning occurs.

3. Water

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. *(See timber sale map and forest practice base maps.)*

Yes.

a) Downstream water bodies:

The streams for this proposal flow into three known streams: Shaw Creek to the west, Bunker Creek to the south and west, and Lincoln Creek to the north. Shaw Creek is a tributary to Bunker Creek, and Bunker Creek is a tributary to the Chehalis River. Lincoln Creek is a tributary to the Chehalis River.

b) Complete the following riparian & wetland management zone table:

Wetland, Stream, Lake, Pond, or Saltwater Name (if any)	Water Type	Number (how many?)	Avg RMZ/WMZ Width in Feet (per side for streams)
Shaw Creek	**3**	**1**	**160**
Unknown	**3**	**2**	**160**
Unknown	**4**	**2**	**100**
Unknown	**½ acre wetland**	**1**	**100**
Unknown	**5**	**6**	**0**

c) List RMZ/WMZ protection measures including silvicultural prescriptions, road-related RMZ/WMZ protection measures, and wind buffers.

Approximately 22 acres of RMZ/s averaging 160 feet wide along three type 3 streams, 6 acres of RMZs which are a minimum 100 feet wide along two type 4 streams, and 3 acres of WMZ which is a minimum of 100 feet wide along one ½ acre wetland. All have been bounded out of the harvest area.

No wind buffer will be retained due to local knowledge of the lack of blowdown in the RMZs in similarly harvested units in the surrounding area.

2) Will the project require any work over, in, or adjacent to (within 200 feet) to the described waters? If yes, please describe and attach available plans.
☐*No* ☒*Yes (See RMZ/WMZ table above and timber sale map.)*
Description (include culverts):

Tail hold cables may hang across three type 3 streams, two type 4 streams, 6 type 5 streams, and one ½ acre wetland. Harvesting and yarding will occur approximately 160 feet away from three type 3 streams. Harvesting and yarding will occur within 100 feet of two type 4 streams, and one ½ acre wetland.

This proposal includes the removal of 3 fish blockage culverts from type 3 streams, and abandoning and re-routing a road system away from type 3 streams to reduce sediment delivery. A hydraulics project approval will be obtained from WDFW. Please see attached Forest Practices application maps and the road plan.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

Less than 20 cubic yards of native material or rock will be used as fill on each culvert (approximately 100 cubic yards total). Rock may come from the Washtub Quarry, a State owned rock pit, or rock may come from an approved commercial source. Approximately 800 cubic yards of native material or rock will be removed from stream crossings and cross drains during road abandonment operations after harvest operations.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. *(Include diversions for fish-passage culvert installation.)*
☐*No* ☒*Yes, description:*

There will be temporary water diversions during culvert removals as part of the road abandonment.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.
☐*No* ☒*Yes, describe location:*

Three culverts within fish bearing streams will be removed from the 100-year flood plain as part of this proposal. A hydraulics project approval will be obtained from WDFW. Please see attached Forest Practices application maps and the road plan.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.
☐*No* ☒*Yes, type and volume:*

Minor amounts of logging slash may enter some type 5 streams.

7) Does the sub-basin contain soils or terrain susceptible to surface erosion and/or mass wasting? What is the potential for eroded material to enter surface water?

Approximately 3% of the soils in the Bunker Creek WAU have a high surface erosion potential and none of the soils have a high mass wasting potential. A high proportion of the eroded material could enter surface water as a result of a mass-wasting event.

Approximately 4% of the sub-basins soils in the Lincoln Creek WAU are highly susceptible to surface erosion and 2% of the soils are highly susceptible to mass wasting. These areas are generally located mid-slope. A small proportion of the eroded material could enter surface water. This may result from roads with poor maintenance and some naturally occurring geomorphological processes. The potential for eroded material to enter surface water based on this proposal is low due to the erosion control measures being included in the proposal. See B.1.h. and B.1.d.5.

8) Is there evidence of changes to the channels in the WAU and sub-basin(s) due to surface erosion or mass wasting (accelerated aggradations, erosion, decrease in large organic debris (LOD), change in channel dimensions)?
☐*No* ☒*Yes, describe changes and possible causes:*

There are indications of channel changes such as increased LWD, erosion, and changes in channel dimensions following unusually high precipitation events.

9) Could this proposal affect water quality based on the answers to the questions 1-8 above?
☐*No* ☒*Yes, explain:*

By implementing the Department's HCP and following Forest Practices rules, the proposal is expected to have minimal to no effect on water quality. The RMZs described in B.3.c. should maintain stream function. Retention trees along portions of type 5 streams will maintain stream bank integrity, provide shade, and recruit LWD.

10) What are the approximate road miles per square mile in the WAU and sub-basin(s)?
Are you aware of areas where forest roads or road ditches intercept sub-surface flow and deliver surface water to streams, rather than back to the forest floor?
☐*No* ☒*Yes, describe:*

There are an average of 4.7 miles of road per square mile in the Bunker Creek WAU. It is estimated that less than 1% of the roads are carrying water for extended periods of time. The older roads have been scheduled for upgrades or abandonment through the Forest Practices RMAP requirements.

Lincoln Creek WAU has an average of 3.6 road miles per square mile. It is estimated that less than 1% of the roads are carrying water for extended periods of time. This is a result of DNR upgrading roads through the Forest Practices RMAP requirements. Older roads that may be intercepting and delivering water have been scheduled for upgrades or abandonment.

*11) Is the proposal within a significant rain-on-snow (ROS) zone? If not, **STOP HERE** and go to question B-3-a-13 below. Use the WAU or sub-basin(s) for the ROS percentage questions below.*
☒*No* ☐*Yes, approximate percent of WAU in significant ROS zone.*
Approximate percent of sub-basin(s):

12) If the proposal is within the significant ROS zone, what is the approximate percentage of the WAU or sub-basin(s) within the significant ROS zone (all ownerships) that is (are) rated as hydrologically mature?

13) Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?
☐*No* ☒*Yes, describe observations:*

The few minimal changes in channels appear to be primarily associated with sediment aggradations and stream channelization in the lower reaches of some streams. Slope failures described in B.1.d.2. occurs during saturated soil conditions associated with peak flow events and can result in downstream sediment aggradations. Lack of LWD can contribute to stream channelization during peak flow events.

14) Based on your answers to questions B-3-a-10 through B-3-a-13 above, describe whether and how this proposal, in combination with other past, current, or reasonably foreseeable proposals in the WAU and sub-basin(s), may contribute to a peak flow impact.

This proposal may slightly change the timing, duration, and amount of water in a peak flow event. These increased peak flows are thought to have resulted in incision of some streams and tributaries and deposition beyond the hills in the broad valley flats. Flow rates may increase slightly during low and high flow periods due to decreased transpiration and interception.

15) Is there water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity that could be affected by changes in surface water amounts, quality, or movements as a result of this proposal?

☐*No* ☒*Yes, possible impacts:*

There are local water intakes approximately 2 miles downstream of the proposal. Buffers on the wetland and type 3 and 4 waters are in place to mitigate for sediment delivery and adverse environmental impacts.

16) Based on your answers to questions B-3-a-10 through B-3-a-15 above, note any protection measures addressing possible peak flow/flooding impacts.

The following measures will address possible peak flow/flooding impacts:

1. **Avoiding diversion and concentration of runoff from roads as well as increasing the number of cross drains, which will allow for better dispersal of associated discharge.**
2. **Designating RMZs averaging 160 feet wide along three type 3 streams and RMZs 100 feet wide along two type 4 streams and one ½ acre wetland.**
3. **Limiting regeneration harvest unit's size to less than 100 acres.**

. Ground *Water*:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

Ground water will not be withdrawn or discharged. However, it is possible that minor amounts of subsurface flow will be intercepted with road construction, excavation slopes.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Insignificant amounts of oil and other lubricants could be discharged inadvertently as a result of heavy equipment use. If spills occur they will be required to be contained and cleaned-up.

3) Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or down slope of the proposed activity that could be affected by changes in groundwater amounts, timing, or movements as a result this proposal?
☒*No* ☐*Yes, describe:*

a) Note protection measures, if any.

None.

c. Water Runoff (including storm water):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Storm water runoff will be collected by road ditches and diverted through cross drain culverts onto the forest floor. Culverts will be placed at locations that will minimize the amount of water runoff directly entering existing stream channels. Small amounts of ditch water may directly enter into streams.

2) Could waste materials enter ground or surface waters? If so, generally describe.

Some logging slash may enter type 5 streams within the proposal.

a) Note protection measures, if any.

Equipment use will be limited along streams in accordance with Forest Practices rules. Concentrations of logging slash will be removed from flowing streams. No lubricants will be disposed of on site. See 3.a.1.c.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

See surface water, ground water, and water runoff sections above, questions B-1-h, B-1-d-5, B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a.

4. Plants

a. Check or circle types of vegetation found on the site:

☒deciduous tree: ☒alder, ☒maple, ☐aspen, ☒*cottonwood,* ☐*western larch,* ☐*birch,* ☐other:
☒evergreen tree: ☒*Douglas fir,* ☒*grand fir,* ☐*Pacific silver fir,* ☐*ponderosa pine,* ☐*lodgepole pine,* ☒*western hemlock,* ☐*mountain hemlock,* ☐*Englemann spruce,* ☐*Sitka spruce,* ☒*red cedar,* ☐*yellow cedar,* ☐other:
☒shrubs: ☒*huckleberry,* ☒*salmonberry,* ☒*salal,* ☐*other:* **Oregon grape, vine maple, elderberry, and sword fern.**
☒grass
☐pasture
☐crop or grain
☒wet soil plants: ☐cattail, ☐buttercup, ☐bullrush, ☒skunk cabbage, ☒*devil's club,* ☐other:
☐water plants: ☐water lily, ☐eelgrass, ☐milfoil, ☐other:
☐other types of vegetation:
☐*plant communities of concern:*

b. What kind and amount of vegetation will be removed or altered? *(See answers to questions A-11-a, A-11-b, B-3-a-1-b and B-3-a-1-c. The following sub-questions merely supplement those answers.)*

Approximately 93% of the over story vegetation will be removed from the 153 net acre sale area. Shrubs and forest floor vegetation will be disturbed by logging equipment, but not removed. Vegetation will not be altered or removed from RMZs.

1) *Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See landscape/WAU and adjacency maps on the DNR website at: http://www.dnr.wa.gov under "SEPA Center.")*

Unit 1
To the east of unit 1 is primarily single story mature conifer stand with small components of hardwoods. This stand is 60 to 70-years old and consists of primarily Douglas-fir and red alder trees with smaller amounts of western redcedar, western hemlock, and bigleaf maple. To the north and west are 5-year-old Douglas-fir plantations. To the south is private land; it consists of a 15-year-old Douglas-fir plantation.

Unit 2
To the north and east of unit 2 is primarily single story mature conifer stand with small components of hardwoods. This stand is 60 to 70-years old and consists of primarily Douglas-fir and red alder trees with smaller amounts of western redcedar, western hemlock, and bigleaf maple. To the west and south of the proposal there is a private land plantation of mostly 15-year-old Douglas-fir.

2) *Retention tree plan:*

Approximately 8 trees per acre were marked as leave trees, these were both clumped and scattered within the units. In unit 1 there are nine ¼ acre clumps and two ½ acre clumps. In unit 2 there are four ¼ acre clumps and one ½ acre clump. Leave trees were scattered and clumped along type 5 streams and in headwall areas. Trees with broken or deformed tops, when possible, were chosen as leave trees to increase chance of wildlife use and future snag recruitment.

c. List threatened or endangered *plant* species known to be on or near the site.

None found on site or in database searches.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Douglas-fir will be planted after harvest and will be allowed to regenerate naturally. RMZs will preserve existing vegetation between the sale area and closest type 3 and type 4 streams.

5. Animal

a. Circle or check any birds animals *or unique habitats* which have been observed on or near the site or are known to be on or near the site:

Birds: ☒hawk, ☐heron, ☐eagle, ☒songbirds, ☐*pigeon*, ☐other:
mammals: ☒deer, ☐bear, ☒elk, ☒beaver, ☐other:
fish: ☐bass, ☐salmon, ☒trout, ☐herring, ☐shellfish, ☐other:
unique habitats: ☐*talus slopes*, ☐*caves*, ☐*cliffs*, ☐*oak woodlands*, ☐*balds*, ☐*mineral springs*

b. List any threatened or endangered species known to be on or near the site *(include federal- and state-listed species).*

None found in database search.

c. Is the site part of a migration route? If so, explain.
☒*Pacific flyway* ☐*Other migration route:* *Explain if any boxes checked:*

This proposal is located in the Pacific flyway, which is part of the Pacific Northwest forests. Many migratory waterfowl also use the Pacific flyway; the area for this proposal is not generally the type of area used for resting or feeding by migratory waterfowl.

The proposal is within the Chehalis River basin. There is potential Bull Trout habitat within this basin. Our HCP riparian strategy, should provide protection of the potential Bull Trout habitat.

d. Proposed measures to preserve or enhance wildlife, if any:

1) *Note existing or proposed protection measures, if any, for the complete proposal described in question A-11.*

Trees left along flowing waters help maintain water quality by maintaining shade, bank stability, and serve as wildlife habitat. Retention trees serve as perches and nest sites and will serve as ecological niches for wildlife. Larger diameter trees that have large limbs, open crowns, and broken tops will be left to preserve current habitat needs and provide future habitat opportunities for many species. These trees will become snags and retention trees in future stands. Maple seeds are an excellent source of food for small mammals and birds. Maple also has a propensity to develop cavities, which may serve as habitat for birds and small mammals in the future.

Riparian Management Zones averaging 160 feet wide along three type 3 streams will be established and protected. Two type 4 streams and one ½ acre wetland will also be protected with a 100 foot wide RMZ. Riparian Management Zones in the Maple Mayhem proposal will help maintain water quality; provide migratory corridors for wildlife; and maintain habitat for fish, reptiles, and other riparian obligate species. Removal of 3 current fish barrier culverts in conjunction with road abandonment will allow fish passage into additional stream reaches that were previously inaccessible by anadromous fish.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

None.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

None.

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

Minimal amounts of oil and other lubricants may accidentally discharge during heavy machinery operation. There is some risk of fire if operations occur during dry times of the year.

1) Describe special emergency services that might be required.

There are not any special emergency services required at this time. Pump trucks and/or pump trailers will be required on site during fire season. In the event of a lubricant spill, the Purchaser shall contact the DNR and the Department of Ecology, begin immediate containment, and clean up of the spill.

2) Proposed measures to reduce or control environmental health hazards, if any:

No oil or lubricants will be disposed of on site. The cessation of operations may occur during periods of time when the risk of fire may increase. Fire tools and equipment will be kept on site during fire season.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

None.

2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from this site.

Minimal noise levels associated with logging operations and truck traffic will be created with the project no longer than a two-year period. No long-term impacts.

3) Proposed measures to reduce or control noise impacts, if any:

None needed.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? *(Site includes the complete proposal, e.g. rock pits and access roads.)*

Timber production and forest management activities.

b. Has the site been used for agriculture? If so, describe.

No.

c. Describe any structures on the site.

None.

d. Will any structures be demolished? If so, what?

No.

e. What is the current zoning classification of the site?

Forestry.

f. What is the current comprehensive plan designation of the site?

Long-term forestry.

g. If applicable, what is the current shoreline master program designation of the site?

Not applicable.

h. Has any part of the site been classified as an “environmentally sensitive” area? If so, specify.

No.

i. Approximately how many people would reside or work in the completed project?

None.

j. Approximately how many people would the completed project displace?

None.

k. Proposed measures to avoid or reduce displacement impacts, if any:

None.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The Maple Mayhem Timber Sale proposal has been laid out in accordance with the Final HCP (September 1997), and current Forest Practices rules as they apply in conjunction with current land use classifications.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

None.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None.

c. Proposed measures to reduce or control housing impacts, if any:

None needed.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principle exterior building material(s) proposed?

Does not apply.

b. What views in the immediate vicinity would be altered or obstructed?

Views from the existing D-1000 and D-1080 roads will be altered by the removal of trees.

1) Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?
☒*No* ☐*Yes, viewing location:*

2) Is this proposal visible from a major transportation or designated scenic corridor (county road, state or interstate highway, US route, river, or Columbia Gorge SMA)?
☒*No* ☐*Yes, scenic corridor name:*

3) How will this proposal affect any views described in 1) or 2) above?

The timber harvest activity may alter the middle ground to background view of the forest structure. However, it is consistent with other past and recent forest practice activities in this area and should blend in with the overall view.

c. Proposed measures to reduce or control aesthetic impacts, if any:

Retention tree clumps and individually scattered trees remaining following the proposed harvest will reduce the visual impacts of the harvest. Riparian Management Zones averaging 160 feet wide along three type 3 streams, and RMZ's a minimum of 100 feet wide along two type 4 streams and one ½ acre wetland will reduce the visual impacts to the area. The site will be replanted after harvest activities.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

None.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No.

c. What existing off-site sources of light or glare may affect your proposal?

No.

d. Proposed measures to reduce or control light and glare impacts, if any:

None needed.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

Dispersed informal recreation in the form of hunting, berry picking, sightseeing, etc.

b. Would the proposed project displace any existing recreational uses? If so, describe:

Recreation will be temporarily displaced during logging operations on the timber harvest area.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any: **None.**

13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

There is an archaeological/historical site located in an adjacent section. This site is located approximately one mile from the proposal. The cultural resource technician (CRT) was contacted, and the CRT determined the proposal is not in a high probability area and would have no impact on the archaeological/historical site.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

None have been identified.

c. Proposed measures to reduce or control impacts, if any:
(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.) **None.**

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

This proposal will use forest roads, accessed by Deep Creek Road (county road).

1) Is it likely that this proposal will contribute to an existing safety, noise, dust, maintenance, or other transportation impact problem(s)? **No.**

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop? **No.**

c. How many parking spaces would the completed project have? How many would the project eliminate? **None.**

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

See A.11.c.

1) How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?

This proposal will temporarily increase the traffic by up to 20 vehicle and log truck round trips per day and should not affect the overall transportation system in the area.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe. **No.**

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

Up to 20 round trips per day could occur during road building and logging operations. After harvest activities are complete, occasional vehicular trips to the site will be generated for future forest management purposes.

g. Proposed measures to reduce or control transportation impacts, if any: **None.**

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe. **No.**

b. Proposed measures to reduce or control direct impacts on public services, if any. **None needed.**

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other. **None.**

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed. **None needed.**

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Completed by: Dave Gufler State Lands Forester Date: June 21, 2006
Title

Reviewed by: Ronn Schuttie Date: _____
State Lands Assistant Manager

Comments: _____